

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT
APPEALS AND INTERFERENCES

In Re Application of:)
Declan Reilly et al.)
Serial No.: 10/770,488) Group Art Unit: 2873
Filed: February 4, 2004) Examiner: Brandi N. Thomas
For: OPTICAL BEAM SPLITTER)
APPARATUS) Atty Dkt. 30021072-2

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Examiner:

This Appeal Brief is submitted in response to the final rejection of the claims mailed October 23, 2007. A Notice of Appeal was filed on February 12, 2008.

This brief contains items under the following headings as required by 37 CFR §41.37 and MPEP §1206:

- (1) Real Party In Interest
- (2) Related Appeals and Interferences
- (3) Status of Claims
- (4) Status of Amendments
- (5) Summary of Claimed Subject Matter
- (6) Grounds of Rejection to be Reviewed on Appeal
- (7) Argument
- (8) Claims Appendix
- (9) Evidence Appendix
- (10) Related Proceedings Appendix

(1) REAL PARTY IN INTEREST

The real party in interest in the above-referenced patent application is Avago Technologies Fiber IP (Singapore) Pte. Ltd., having an address at No. 1 Yishun Avenue 7, Singapore 768923.

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences currently known to appellants, appellants' legal representatives or the assignee, which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

(3) STATUS OF CLAIMS

Claims 1-8 were filed with the application. Claims 1-21 are currently pending in the application. The rejection of claims 1-21 is appealed.

(4) STATUS OF AMENDMENTS

A Final Response was filed on December 18, 2007 to the Final Office Action mailed October 23, 2007. No claims were amended in the Final Response; only arguments were made concerning the claims.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention as independently claimed is summarized and explained below with reference numerals, specification page numbers and drawing figure numbers indicating where the claim finds support in the specification and drawings.

1. A beam splitter apparatus (10) comprising a first beam splitter mount (30) and a second beam splitter mount (40), the first beam splitter mount (30) being coupled to the second beam splitter mount (40) by a deformable connection (50), the beam splitter apparatus (10) being arranged so that, in use, a force applied to the second beam splitter mount (40) causes the second beam splitter mount (40) to turn relative to the first beam splitter mount (30) [Fig. 1; pg. 3, lines 10-14].

15. A method of controlling a beam comprising directing the beam so it is incident on a first beam splitter (35) and then on a beam deflector so that the beam is incident on the first beam splitter (35) and a portion of the beam is then incident in the beam deflector, the first beam splitter (35) and the beam deflector being on different first (30) and second (40) mounts arranged so the portion of the beam incident on the beam deflector propagates longitudinally from the first beam splitter (35) to the beam deflector respectively [Fig. 1; pg. 3, lines 10-14], the method comprising:

turning the beam deflector through an angle relative to the longitudinal propagation direction by deforming a connection (50) between the beam deflector and the second mount (40) [Fig. 1; pg. 3, lines 10-14].

**(6) GROUNDS OF REJECTION TO BE REVIEWED ON
APPEAL**

- A. Claims 1-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al. (US 2003/0076766 A1).

(7) ARGUMENT

Argument re Issue A

Claims 1-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al. (US 2003/0076766 A1). Appellants respectfully assert, for at least the reasons advanced below, that claims 1- 21 are not unpatentable over Nagata et al.

Claims 1 and 15

Claim 1 recites the following:

A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

Claim 15 recites the following:

A method of controlling a beam comprising directing the beam so it is incident on a first beam splitter and then on a beam deflector so that the beam is incident on the first beam splitter and a portion of the beam is then incident in the beam deflector, the first beam splitter and the beam deflector being on different first and second mounts arranged so the portion of the beam incident on the beam

deflector propagates longitudinally from the first beam splitter to the beam deflector respectively, the method comprising:

turning the beam deflector through an angle relative to the longitudinal propagation direction by deforming a connection between the beam deflector and the second mount.

Regarding claims 1 and 15, the Examiner states that Nagata et al. in Figures 6A-6E, discloses, a beam splitter apparatus comprising: a first beam splitter mount (21) and a second beam splitter mount (22), the first beam splitter mount (21) being coupled to the second beam splitter (22) (Figures 6C and 6D) the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount (22) causes the first beam splitter mount (21) (section 0128) but does not specifically disclose a deformable connection between the first and second beam splitter mounts.

Thus, by the Examiner's own admission, neither Nagata nor any of the other references of record provide any teaching, whatsoever, of Appellants' claimed use of a deformable connection between first and second beam splitter mounts. Appellants' claimed use of a deformable connection between first and second beam splitter mounts is not a matter within the knowledge of a person of ordinary skill in the art and the Examiner has submitted no evidence to the contrary. Accordingly, there is absolutely nothing in the file history of this prosecution to support the Examiner's statement.

There must be something in the teachings of cited references to suggest to an individual skilled in the art that a claimed invention would be obvious. *W. L. Gore and Associates v. Garlock, Inc.*, 220 USPQ 303, 311 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). "There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure." *In re Dow Chemical Co.*, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988).

The Examiner has provided no evidence that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a deformable connection between first and second beam splitter mounts. The examiner must provide **evidence** and personal opinion is not evidence:

... the deficiencies in the cited references cannot be remedied by the Board's general conclusions about what is "basic knowledge" or "common sense" to one of ordinary skill in the art.... This assessment of basic knowledge and common sense was not based on any evidence in the record and, therefore, lacks substantial evidence support.... With respect to core factual findings in a determination of patentability ... the Board cannot simply reach conclusions based on its own understanding or experience - or in its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings. *In re Zurko*, 59 USPQ 2d 1693 (Fed. Cir. 2001)

For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claims 1 and 15 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claims 1 and 15 be withdrawn.

Claim 2

Claim 2 recites the following:

The beam splitter apparatus of claim 1, wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount in response to flexing of the deformable connection.

Claim 1 recites the following:

A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

Claim 2 is dependent on claim 1 and therefore includes all limitations of claim 1.

Claim 2 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 2 stands or falls with claim 1.

Claims 3, 4, 9-10, and 16-17

Claim 3 recites the following:

The beam splitter apparatus of claim 2 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of ten degrees or less.

Claim 4 recites the following:

The beam splitter apparatus of claim 2 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of two degrees or less.

Claim 9 recites the following:

The beam splitter apparatus of claim 1 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of ten degrees or less.

Claim 10 recites the following:

The beam splitter apparatus of claim 1 wherein the second splitter mount is arranged to turn relative to the first beam splitter mount through an angle of two degrees or less.

Claim 1 recites the following:

A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

Claim 16 recites the following:

The method of claim 15 wherein the connection is deformed to cause the beam deflector to turn through an angle of ten degrees or less.

Claim 17 recites the following:

The method of claim 15 wherein the connection is deformed to cause the beam deflector to turn through an angle of two degrees or less.

Claim 15 recites the following:

A method of controlling a beam comprising directing the beam so it is incident on a first beam splitter and then on a beam deflector so that the beam is incident on the first beam splitter and a portion of the beam is then incident in the beam deflector, the first beam splitter and the beam deflector being on different first and second

mounts arranged so the portion of the beam incident on the beam deflector propagates longitudinally from the first beam splitter to the beam deflector respectively, the method comprising:

turning the beam deflector through an angle relative to the longitudinal propagation direction by deforming a connection between the beam deflector and the second mount.

Claims 3-4 and 9-10 are dependent on claim 1 and therefore include all limitations of claim 1.

Claims 3-4 and 9-10 are allowable at least as depending from allowable base claim 1. For purposes of this appeal, claims 3-4 and 9-10 stand or fall with claim 1.

Claims 16 and 17 are dependent on claim 15 and therefore include all limitations of claim 15.

Claims 16 and 17 are allowable at least as depending from allowable base claim 15. For purposes of this appeal, claims 16 and 17 stand or fall with claim 15.

Claims 5 and 11

Claim 5 recites the following:

The beam splitter apparatus of claim 3 wherein the beam splitter apparatus comprises a material having a coefficient of thermal expansion of 8ppm/K or less.

Claim 11 recites the following:

The beam splitter apparatus according to claim 1 wherein the beam splitter apparatus comprises a material having a coefficient of thermal expansion of 8ppm/K or less.

Claim 1 recites the following:

A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

Regarding claims 5 and 11, the Examiner states that Nagata et al. in Figures 6A-6E, discloses a beam splitter apparatus, but does not specifically disclose wherein the beam splitter apparatus comprises a material having a coefficient of thermal expansion of 8ppm/K or less.

Thus, by the Examiner's own admission, neither Nagata nor any of the other references of record provide any teaching, whatsoever, of Applicants' claimed use of a beam splitter apparatus comprising a material having a coefficient of thermal expansion of 8ppm/K or less. Appellants' claimed use of a beam splitter apparatus comprising a material having a coefficient of thermal

expansion of 8ppm/K or less is not a matter within the knowledge of a person of ordinary skill in the art and the Examiner has submitted no evidence to the contrary. Accordingly, there is absolutely nothing in the file history of this prosecution to support the Examiner's statement. There must be something in the teachings of cited references to suggest to an individual skilled in the art that a claimed invention would be obvious. *W. L. Gore and Associates v. Garlock, Inc.*, 220 USPQ 303, 311 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). "There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure." *In re Dow Chemical Co.*, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988).

The Examiner has provided no evidence that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a beam splitter apparatus comprising a material having a coefficient of thermal expansion of 8ppm/K or less. The examiner must provide **evidence** and personal opinion is not evidence.

For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claims 5 and 11 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claims 5 and 11 be withdrawn.

Claims 6-8, 12-14, and 18-21

Claim 6 recites the following:

The beam splitter apparatus of claim 5 wherein the beam splitter apparatus comprises kovar.

Claim 7 recites the following:

The beam splitter apparatus of claim 6 wherein the beam splitter apparatus further comprises a first beam splitter mounted in the first beam splitter mount and a second beam splitter mounted in the second beam splitter mount, the beam splitter apparatus, in use, being arranged such that the first beam splitter and the second beam splitter receive optical energy emitted by an optical source.

Claim 8 recites the following:

The beam splitter apparatus of claim 7, wherein, in use, the optical energy reflected by the first beam splitter is adapted to be used to determine the output power of the optical energy emitted by the optical source and the optical energy reflected by the second beam splitter is adapted to be used to determine a wavelength property of the optical energy emitted by the optical source.

Claim 12 recites the following:

The beam splitter apparatus of claim 1, wherein the beam splitter apparatus comprises kovar.

Claim 13 recites the following:

The beam splitter apparatus of claim 1 wherein the beam splitter apparatus further comprises a first beam splitter mounted in the first beam splitter mount and a second beam splitter mounted in the second beam splitter mount, the beam splitter apparatus, in use, being arranged such that the first beam splitter and the second beam splitter receive optical energy emitted by an optical source.

Claim 14 recites the following:

The beam splitter apparatus of claim 13, wherein, in use, the optical energy reflected by the first beam splitter is adapted to be used to determine the output power of the optical energy emitted by the optical source and the optical energy reflected by the second beam splitter is adapted to be used to determine a wavelength property of the optical energy emitted by the optical source.

Claim 1 recites the following:

A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

Claim 18 recites the following:

The method of claim 15 wherein the first beam splitter deflects another portion of the beam incident on it and is not incident on the beam deflector, further comprising:

indicating the power in the beam incident on the first beam splitter by measuring the power in the beam deflected by the first beam splitter.

Claim 19 recites the following:

The method of claim 18 further comprising indicating the wavelength of the beam incident on the first beam splitter by measuring the wavelength of the beam deflected by the beam deflector.

Claim 20 recites the following:

The method of claim 15 further comprising indicating the wavelength of the beam incident on the first beam splitter by measuring the wavelength of the beam deflected by the beam deflector.

Claim 21 recites the following:

The method of claim 15 wherein the beam deflector is a second beam splitter.

Claim 15 recites the following:

A method of controlling a beam comprising directing the beam so it is incident on a first beam splitter and then on a beam deflector so that the beam is incident on the first beam splitter and a portion of the beam is then incident in the beam deflector, the first beam splitter and the beam deflector being on different first and second mounts arranged so the portion of the beam incident on the beam deflector propagates longitudinally from the first beam splitter to the beam deflector respectively, the method comprising:

turning the beam deflector through an angle relative to the longitudinal propagation direction by deforming a connection between the beam deflector and the second mount.

Claims 6-8 and 12-14 are dependent on claim 1 and therefore include all limitations of claim 1.

Claims 6-8 and 12-14 are allowable at least as depending from allowable base claim 1. For purposes of this appeal, claims 6-8 and 12-14 stand or fall with claim 1.

Claims 18-21 are dependent on claim 15 and therefore include all limitations of claim 15.

Claims 18-21 are allowable at least as depending from allowable base claim 15. For purposes of this appeal, claims 18-21 stand or fall with claim 15.

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Respectfully submitted,
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(8) CLAIMS APPENDIX

1. A beam splitter apparatus comprising a first beam splitter mount and a second beam splitter mount, the first beam splitter mount being coupled to the second beam splitter mount by a deformable connection, the beam splitter apparatus being arranged so that, in use, a force applied to the second beam splitter mount causes the second beam splitter mount to turn relative to the first beam splitter mount.

2. The beam splitter apparatus of claim 1, wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount in response to flexing of the deformable connection.

3. The beam splitter apparatus of claim 2 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of ten degrees or less.

4. The beam splitter apparatus of claim 2 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of two degrees or less.

5. The beam splitter apparatus of claim 3 wherein the beam splitter apparatus comprises a material having a coefficient of thermal expansion of 8ppm/K or less.

6. The beam splitter apparatus of claim 5 wherein the beam splitter apparatus comprises kovar.

7. The beam splitter apparatus of claim 6 wherein the beam splitter apparatus further comprises a first beam splitter mounted in the first beam splitter mount and a second beam splitter mounted in the second beam splitter mount, the beam splitter apparatus, in use, being arranged such that the first beam splitter and the second beam splitter receive optical energy emitted by an optical source.

8. The beam splitter apparatus of claim 7, wherein, in use, the optical energy reflected by the first beam splitter is adapted to be used to determine the output power of the optical energy emitted by the optical source and the optical energy reflected by the second beam splitter is adapted to be used to determine a wavelength property of the optical energy emitted by the optical source.

9. The beam splitter apparatus of claim 1 wherein the second beam splitter mount is arranged to turn relative to the first beam splitter mount through an angle of ten degrees or less.

10. The beam splitter apparatus of claim 1 wherein the second splitter mount is arranged to turn relative to the first beam splitter mount through an angle of two degrees or less.

11. The beam splitter apparatus according to claim 1 wherein the beam splitter apparatus comprises a material having a coefficient of thermal expansion of 8ppm/K or less.

12. The beam splitter apparatus of claim 1, wherein the beam splitter apparatus comprises kovar.

13. The beam splitter apparatus of claim 1 wherein the beam splitter apparatus further comprises a first beam splitter mounted in the first beam splitter mount and a second beam splitter mounted in the second beam splitter mount, the beam splitter apparatus, in use, being arranged such that the first beam splitter and the second beam splitter receive optical energy emitted by an optical source.

14. The beam splitter apparatus of claim 13, wherein, in use, the optical energy reflected by the first beam splitter is adapted to be used to determine the output power of the optical energy emitted by the optical source and the optical energy reflected by the second beam splitter is adapted to be used to determine a wavelength property of the optical energy emitted by the optical source.

15. A method of controlling a beam comprising directing the beam so it is incident on a first beam splitter and then on a beam deflector so that the beam is incident on the first beam splitter and a

portion of the beam is then incident in the beam deflector, the first beam splitter and the beam deflector being on different first and second mounts arranged so the portion of the beam incident on the beam deflector propagates longitudinally from the first beam splitter to the beam deflector respectively, the method comprising:

turning the beam deflector through an angle relative to the longitudinal propagation direction by deforming a connection between the beam deflector and the second mount.

16. The method of claim 15 wherein the connection is deformed to cause the beam deflector to turn through an angle of ten degrees or less.

17. The method of claim 15 wherein the connection is deformed to cause the beam deflector to turn through an angle of two degrees or less.

18. The method of claim 15 wherein the first beam splitter deflects another portion of the beam incident on it and is not incident on the beam deflector, further comprising:

indicating the power in the beam incident on the first beam splitter by measuring the power in the beam deflected by the first beam splitter.

19. The method of claim 18 further comprising indicating the

wavelength of the beam incident on the first beam splitter by measuring the wavelength of the beam deflected by the beam deflector.

20. The method of claim 15 further comprising indicating the wavelength of the beam incident on the first beam splitter by measuring the wavelength of the beam deflected by the beam deflector.

21. The method of claim 15 wherein the beam deflector is a second beam splitter.

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(9) EVIDENCE APPENDIX

No evidence pursuant to §§ 1.130, 1.131 or 1.132 or entered by or relied upon by the Examiner is being submitted.

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(10) RELATED PROCEEDINGS APPENDIX

No related proceedings are referenced in (2) above.
Accordingly, no copies of decisions in related proceedings are provided.